12/19/86 R5650-2

JAPAN · ECONOMIC · INSTITUTE

JEI

REPORT

NO. 45A December 12, 1986

U.S. TELECOMMUNICATIONS EXPORTS TO JAPAN: THE DEREGULATED DIFFERENCE

Summary

Tokyo's impending deregulation of the domestic telecommunications equipment and services market was the subject of intense negotiations with Washington in 1984-85. With Japanese firms enjoying booming sales of telecommunications equipment in the U.S. market, Washington sought similar opportunities for domestic companies in Japan. The negotiations were lengthy and tense, but ultimately very successful; all sides agree that U.S. exports of telecommunications equipment and expertise have benefited from deregulation. This report describes the deregulated Japanese market, the strategies U.S. firms have pursued and the resulting trade changes.

Introduction

On April 1, 1985 Japan's domestic telecommunications equipment and services market was opened to private-sector competition. This dramatic shift, which nearly doubled the size of the market overnight, had domestic origins. Japanese telecommunications equipment makers had reached the state of the art in some areas and were eager to expand sales at home and abroad. Similarly, customer needs had grown faster and more sophisticated than Nippon Telegraph and Telephone Public Corp.'s ability to meet them, leaving users dissatisfied. But the deregulated market's final form was heavily influenced by American thinking. It is undoubtedly true that Tokyo used the breakup of American Telephone & Telegraph Co. as a model, both in terms of what to do and what not

to do. But it was the outcome of the intense bilateral MOSS (market-oriented sector-selective) negotiations that had the greatest impact on areas important to U.S. exporters.

The New Market: Deregulation and Liberalization

Japan's deregulation plan can be divided into two main parts -- the privatization of the government telecommunications monopoly and the entry of private firms into the telecommunications services market -- and two related issues.

NTT Privatization - On April 1, 1985 Nippon Telegraph and Telephone was transformed from a public enterprise into a joint stock corporation, dropping the word "Public" from its name in the process. The new NTT was capitalized at Y780 billion ($4.9 billion at Y160=$1.00), far above the Y18.8 billion capitalization at its inception in 1952. Initially, all NTT shares were held by the government. Tokyo is in the midst of selling off the first bloc of stock to the public, the first step toward putting up to two-thirds of NTT into private hands. (Foreigners are not allowed to own shares, however.) The new NTT's budget and business plan must be authorized by the government, a simpler procedure than securing Diet approval. Although it is still obliged to provide nationwide telephone service and conduct research and development in telecommunications, NTT gained the ability to change its service rates (with authorization from the Ministry of Posts and Telecommunications) and the freedom to invest in areas other than telecommunications. Finally, the board of directors will be elected by the shareholders rather than appointed by MPT, although the ministry's authorization is still necessary for any board changes.

NTT is also required to adhere to the terms of the 1981 procurement agreement negotiated between the United States and Japan, which was recently extended through 1989 (see JEI Report No. 42B, November 14, 1986). It will continue to facilitate equipment bids from foreign suppliers and make its long-term equipment and technology development programs open to them. In fact, NTT's president has repeatedly stated that the firm will buy the best products regardless of their national origin.

While the Japanese telecommunications reorganization is not quite as drastic as the breakup of AT&T -- for instance, local and long-distance services are still under its domain -- this does not mean that NTT faces less pressure from new private competitors than AT&T is experiencing.

Market Deregulation - The legislation mandating reform specifies two types of telecommunications businesses. Firms that build their own telecommunications circuit facilities are classified Type I. These firms must obtain MPT's permission to begin and cease operations as well as to change their tariff schedules. They must also heed any government orders to amend the tariff rates, to "improve business activities" and to "interconnect or share telecommunciations facilities." Foreign control of Type I firms is not permitted.

All other telecommunications firms are classified Type II. This does not mean Type II firms cannot be common carriers. Companies can rent or lease

The JEI REPORT (ISSN 0744-6489) is published weekly for $40 per year by the Japan Economic Institute of America, 1000 Connecticut Avenue, N.W., Washington, D.C. 20036. Second class postage paid at Washington, D.C. POSTMASTERS: Send address changes to JEI, 1000 Connecticut Avenue, N.W., Washington, D.C. 20036.

circuits from a Type I firm and provide voice/data services to the general public on a nationwide scale. These services for "many and unspecific persons with large-scale network" are considered Special Type II firms. All others are General Type IIs. Special Type IIs must register with MPT to begin operations, but need only notify the ministry if they intend to go out of business or change rates. General Type IIs are expected to notify MPT of their plans in all instances. All Type II firms are subject to government oversight.

Telecommunications Terminal Equipment Standards and Approval - This was one of the most difficult areas for Japan and the United States to negotiate. MPT, in its traditional role as guarantor of quality and satisfaction to the Japanese consumer, sought to establish strict standards across a broad range of areas. U.S. negotiators wanted just the opposite: limiting MPT's role to insuring only that terminal equipment does not harm the network. They contended that all other performance and appearance standards were unnecessary. MPT eventually agreed to the majority of U.S. requests. Technical standards were reduced from 53 to 21. The private Telecommunications Technology Committee was established in October 1985 to draft all subsequent standards. (Foreign firms are members of TTC.) The Japan Approvals Institute for Telecommunications Equipment was founded as an independent testing and certification body to approve equipment from all companies (including NTT), and it agreed to accept foreign test data for approval purposes. Finally, the approval process was made transparent and simplified.

Cellular Telephone Service - Because cellular (mobile) telephone service relies on wireless transmission, which was outside the realm of the deregulation legislation, the United States initiated discussions on amendments to Japan's Radio Law in an effort to liberalize this lucrative NTT monopoly. Although mobile telephones have been available in Japan since 1979, and pocket pagers since 1969, the market's potential remained largely untapped. Starting with 1,557 users in one city in 1979, cellular telephone service had expanded to 473 cities and 61,786 users by the end of 1985, an average growth rate of just over 100 percent. Although not as spectacular, the growth of paging receivers was estimated by MPT at 14.3 percent from fiscal 1984 to fiscal 1985, bringing the total number in use to approximately 2.2 million.

The issue was complicated by the fact that Tokyo had allocated portions of the radio spectrum differently than in the United States and that NTT's cellular telephone format was different from the U.S. standard. This meant that foreign firms had to alter their equipment for sale in Japan, which they were reluctant to do. MPT thus asked the TTC to examine whether Japanese and foreign standards could coexist. The council reported in April 1986 that this was technically feasible.

MPT then agreed to amend the Radio Law to allow foreign firms to obtain a license to operate a private radio facility for mobile communications on land, effective July 1, 1986. The Radio Facilities Technical Compliance Certification System was simplified to limit its standards to those necessary to "avoid interference with other users" and to encourage "the efficient use of frequencies." The minimum set of standards was reduced from ten to one; the nine others are voluntary. Approval procedures followed by the Radio Equipment Technical Certification Institute were simplified and foreign test data are now acceptable.

Administrative Policy - In order to make MPT's administrative and policy processes more transparent to foreign firms, Japanese employees of foreign-affiliated companies have been invited to participate in MPT's advisory councils, including the ministry's Telecommunications Council and the private TTC. In addition, MPT has pledged to continue working toward greater transparency in all approval and standard-setting procedures. The ministry will also improve the distribution of information to foreign firms as well as continue to seek their opinions.

Import Promotion - Tokyo has taken two other steps specifically aimed at encouraging imports of foreign products. As part of a July 30, 1985 market liberalization package, tariffs on five items -- telephone instruments (4.2 percent), telegraph equipment (3.6 percent), electronic switches (5.7 percent), current-carrier equipment (3.6 percent) and radio communications equipment (4 to 5.1 percent) -- were eliminated at the end of 1986. To encourage small businesses to broaden their purchasing practices, special depreciation rates and tax exemptions were introduced for imported mechanical or electronic products. In contrast to the normal first-year depreciation allowance of 30 percent, small firms can depreciate 36 percent of the cost of qualified imported items. In addition, buyers of imported high technology equipment qualify for an 8.4 percent tax exemption as opposed to 7 percent for domestic products.

The New Market: Foreign Strategies

Unlike earlier regulatory disclosures, U.S. firms were aware of the impending telecommunications deregulation in time to pursue a range of market entry strategies while at the same time developing the personal ties that are so important in penetrating the Japanese market.

The most common approach, and one followed almost exclusively by small firms, is to appoint an established Japanese firm as sales agent. It is not surprising to find Japanese trading companies (sogo shosha) playing a central role in this mode. The Japanese trading giants have been seeking ways to expand beyond their traditional emphasis on bulk industrial and agricultural materials, and their focus has been on high technology, especially communications technology. They have been actively searching for innovative, advanced foreign products since the beginning of the decade and small American firms have been favorite partners.

Another popular entry method is a joint venture with a Japanese firm. The foreign partner usually supplies the core technology while the Japanese partner brings the product into accord with Japanese standards and handles distribution and sales. Both small and large firms alike have found this a useful route, but large firms have found it particularly advantageous in entering a broad range of market segments. The activities of IBM Japan Ltd. epitomize this approach. It has pursued everything from small-scale value-added networks to the manufacture of various types of telecommunications equipment via joint ventures, and has even linked up with NTT in several fields.

The remaining two options -- establishing a wholly owned subsidiary or marketing operation and buying an existing Japanese firm -- have been much less common. It is difficult for a newcomer operating on its own to establish credibility with customers and distributors. This is not an insurmountable obstacle, but a firm must take a long-term view if the strategy is to succeed.

Buyouts are still extremely rare in Japan, and even rarer when a foreign firm is involved. Japanese business practices are simply not amenable to this approach.

Although it no longer monopolizes the domestic telecommunications market, NTT still accounts for nearly half of all equipment purchases. A handful of foreign firms have therefore targeted NTT as a customer for their most advanced products. Although American firms have sold NTT an assortment of off-the-shelf products, Northern Telecom Inc. appears to have made the greatest effort to become an accepted NTT supplier. Its digital private branch exchange system was one of the first major products to be developed in cooperation with NTT (the Track III-A approach) and to receive NTT's type approval. NTT's information network service (INS), the Japanese counterpart to the American integrated services digital network (ISDN), has also attracted interest from several American firms, including IBM Japan.

The Deregulated Difference

A survey of JEI's monthly publication, the Japan-U.S. Business Report, reveals some important shifts in the approach used by foreign firms entering the Japanese telecommunications market since 1983. At that time, nearly all agreements between U.S. and Japanese firms were simple sales agency pacts. The exceptions to this rule were those U.S. affiliates already well established in Japan, IBM for example. Beginning in 1984, the number of joint ventures began accelerating; wholly owned subsidiaries have become more visible only within the last year. The activity is so fast and furious that a score-card is necessary to keep all the players straight.

According to the Ministry of Posts and Telecommunications, 1,151 new types of equipment were approved for use in fiscal 1985 (ended March 31, 1986); telephone handsets accounted for 31 percent of the total; key telephones for another 16 percent; modems, 9 percent; data terminals another 8 percent; and private-branch exchanges 4 percent. Of this total, JATE approved 174 different types of foreign-made terminal equipment, almost six times the number approved the previous fiscal year (25). The United States led the pack with 103 of the 174, followed by Taiwan (35), Italy (13) and Hong Kong (13).

MPT reports that five new Type I firms (three of which have already begun operations) and 209 Type II companies were registered in fiscal 1985. The ministry does not have figures on the percentage of foreign versus domestic firms. These new entities have drastically altered the shape of the market. MPT estimates that NTT accounted for 48.6 percent of FY 1985's Y1,247 billion ($7.8 billion) equipment market, the private sector another 41.5 percent and the government the remaining 9.9 percent. Over the past five fiscal years, the ministry asserts, private demand for telecommunications equipment has grown by 6 percent annually while demand by NTT has fallen 5.2 percent. This decline, however, has not affected purchases from abroad. The telecommunications giant bought Y37 billion ($231.3 million) from abroad in FY 1985, a gain of Y1.9 billion ($11.9 million) over the previous year. Sales of U.S. gear to NTT have been flat for the past three fiscal years, however -- Y31.2 billion ($195 million) in FY 1983, Y31.8 billion ($198.8 million) in FY 1984 and Y32 billion ($200 million) last fiscal year.

It is difficult, if not impossible, to accurately gauge the foreign share in Japan's growing telecommunications market. It can be asserted that foreign firms are present in nearly every market segment. AT&T International Inc., Rolm Corp., Digital Switch Corp., IBM Japan and Northern Telecom all have developed solid beachheads in the telephone, PBX and transmission equipment areas. Corning Glass Works, GTE Corp., E.I. DuPont de Nemours & Co., Gould Inc. and a handful of smaller American firms have entered the fiber-optic market. Motorola Inc. will supply equipment to a Japanese consortium out to compete with NTT in the pocket paging and mobile telephone businesses. The private satellite communications field is composed entirely of tie-ups between U.S. and Japanese firms. And finally, American firms are beginning to tap the research and development potential of the Japanese market: Pacific Telesis International inked an agreement with NTT in 1985 to exchange personnel, and Bell Laboratories Inc. opened a liaison office in Japan in 1986.

The situation is also difficult to evaluate in terms of trade flows because the trade statistics do not distinguish telecommunications products from other closely related items. According to the Commerce Department, U.S. exports of telecommunications gear to Japan rose by 17.3 percent in 1983 (to $207 billion), 1.3 percent in 1984 ($210 billion), and 7.9 percent in 1985 ($226 billion), a mixed record when compared to overall U.S. export growth of 4.3 percent, 7.3 percent and -3.4 percent, respectively. For the first eight months of 1986, Commerce calculated a rise in shipments of these products of 11.6 percent.

Data compiled from U.S. and Japanese trade publications confirm this assertion (see Tables 1-4). Although the two sets of data are not directly comparable, both show that U.S. exports have performed well both in terms of volume and value. Exchange rate considerations are not a factor in the 1982-85 figures, since the average yen-dollar rate was relatively stable. When comparing the data for the first seven or eight months of 1984-86, however, it is important to realize that the yen has appreciated significantly (averaging, according to the Ministry of Finance, Y232.89, Y251.12 and Y176.13, respectively, for import transactions). Therefore, even if volume remained constant between 1985 and 1986, the dollar value would still have increased by 42.6 percent due to exchange rate changes.

Outlook

An advisory body to MPT predicts that the total telecommunications equipment and services market will grow to Y10.4 trillion ($65 billion) by 1990, and Y19 trillion ($118.8 billion) by the end of this century. Even if these figures prove to be optimistic, it is still obviously worthwhile for foreign firms to try to garner a share of the action. The overview of foreign activity shows that American companies have made a good start at developing a solid market position. Although MPT is attempting to limit the number of firms in the satellite communications market and the pocket pager market, it appears that entry into other segments is relatively free.

From the foreign viewpoint, there are still some areas that could be improved. Government procurement remains an area of uncertainty. MPT's registration procedures and classifications, though greatly simplified, are still more complex than those used in the United States. NTT remains a difficult

customer, and Tokyo is sensitive about meddling in the affairs of the "private" firm. In general, the atmosphere has improved, but is still not perfect in the eyes of some Americans. Although this is cause for some concern given the 100th Congress's intention to pass new trade legislation, the outlook must be considered positive. The weaker dollar should add more weight to the American push into the Japanese telecommunications market, but it appears that deregulation is the key difference.

For further information, contact Jon Choy.

* * * * * *

The views expressed in this report are those of the author and do not necessarily represent those of the Japan Economic Institute.

Table 1: Japan's Imports of Selected Communications Equipment, 1982-1985

(in indicated quantity units and ¥1,000)

Trade classification number, item and units	1982 Quantity United States	1982 Quantity Total	1982 Value United States	1982 Value Total	1983 Quantity United States	1983 Quantity Total	1983 Value United States	1983 Value Total
85.13-								
110 Carrier current line systems, No.	7,116	9,109	¥2,754,449	¥3,446,182	10,774	13,644	¥3,443,110	¥4,171,954
121 Electronic telephonic switchboards and exchanges, No.	56	118	256,102	1,884,559	156	351	1,219,844	2,077,755
122 Other telephonic switchboards and exchanges, No.	--	10	--	4,291	2	270	508	1,239
129 Other electric line telephonic gear, No.	7,858	55,354	256,382	633,605	8,405	224,401	320,354	1,412,052
130 Electric line telegraphic gear, No.	3,452	3,830	294,358	478,241	19,517	19,688	148,146	202,227
210 Parts for electric line telephonic and telegraphic gear, Kg.	49,883	249,967	7,355,494	8,308,904	46,031	296,594	7,167,904	8,156,932
220 Multipurpose parts, Kg.	1,406	3,070	51,256	84,369	2,448	10,927	125,839	144,956
Total	69,771	321,458	10,968,041	14,840,151	87,333	565,875	12,425,705	16,167,115
85.15-								
424 VHF transmitters and transmitter-receivers, No.	493	4,460	12,673,005	13,100,783	644	23,985	11,768,408	12,339,810
425 Other transmitters and transmitter-receivers, No.	57,943	60,720	2,423,329	2,545,138	75,328	81,931	3,069,194	3,136,446
510 Parts of radiotelegraphic-radiotelephonic, radio broadcasting and television transmission and reception gear; and television cameras, Kg.	70,361	1,323,486	3,249,465	11,606,174	61,788	1,662,038	3,454,064	12,567,277
Total	128,797	1,388,666	18,345,799	27,252,095	137,760	1,767,954	18,291,666	28,043,533
85.21-								
140 Tubes for telephonic-telegraphic, radio broadcasting and television transmission gear (excluding receiving tubes), No.	83,401	87,999	668,934	766,730	29,669	31,877	841,194	968,217
85.23-								
120 Communications cable, Kg.	--	--	--	--	76,477	100,929	211,581	342,989
121 Copper communications cable, Kg.	21,495	76,537	164,190	476,759	--	--	--	--
129 Other communications cable, Kg.	656	780	113,648	114,059	--	--	--	--
Total	22,151	77,317	277,838	590,818	76,477	100,929	211,581	342,989
90.13-								
091 Other optical appliances and instruments, No.	21,303	168,866	3,863,178	4,649,541	14,945	193,028	4,120,590	4,901,828
099 Parts and accessories for optical appliances, instruments and lasers, Kg.	13,103	16,644	1,209,793	1,300,458	29,416	34,031	1,963,061	2,230,675
Total	34,406	185,510	5,072,971	5,949,999	44,361	227,059	6,083,651	7,132,503
90.25-								
030 Instruments and gear for checking quantities of heat, light or sound and parts, Kg.	324	347	25,145	43,536	499	1,913	33,243	88,736
90.28-								
121 Spectrum analyzers	656	2,667	2,856,815	2,905,013	538	546	2,566,409	2,594,149
Total	339,506	2,063,964	38,215,543	¥2,348,342	376,637	2,696,153	40,453,449	¥5,337,242

Table 1 (continued)

(in indicated quantity units and Y1,000)

Trade classification number, item and units	1984 Quantity United States	1984 Quantity Total	1984 Value United States	1984 Value Total	1985 Quantity United States	1985 Quantity Total	1985 Value United States	1985 Value Total
85.13-								
110 Current carrier line systems, No.	17,508	22,139	Y4,211,646	Y4,979,579	33,082	41,462	Y5,689,992	Y6,427,261
121 Electronic telephonic switchboards and exchanges, No.	188	262	1,641,081	1,754,024	263	1,074	2,356,737	2,459,825
122 Other telephonic switchboards and exchanges, No.	4	66	1,662	10,445	9	464	843	29,927
129 Other electric line telephonic gear, No.	66,789	895,747	1,034,223	2,708,700	96,399	1,541,764	1,644,761	4,262,396
130 Electric line telegraphic gear, No.	23,613	24,543	146,488	208,245	34,320	36,505	433,902	566,466
210 Parts for electric line telephonic and telegraphic gear, Kg.	62,950	261,471	10,246,983	11,101,686	70,874	232,891	14,234,238	15,276,851
220 Multipurpose parts, Kg.	9,491	28,854	921,977	1,070,942	4,578	20,533	402,858	431,628
Total	180,543	1,233,082	18,204,060	21,833,621	239,525	1,874,693	24,763,331	29,454,354
85.15-								
424 VHF transmitters and transmitter-receivers, No.	1,345	16,548	5,080,857	5,496,710	4,390	17,559	1,014,077	1,252,727
425 Other transmitters and transmitter-receivers, No.	74,666	85,008	2,887,047	3,029,256	75,165	80,297	2,456,717	2,563,067
510 Parts of radiotelegraphic-radiotelephonic, radio broadcasting and television transmission and reception gear; and television cameras, Kg.	90,991	1,769,293	2,514,668	12,237,589	77,035	2,293,564	3,354,035	16,554,036
Total	167,002	1,870,849	10,482,572	20,763,555	156,590	2,391,420	6,824,829	20,369,830
85.21-								
140 Tubes for telephonic-telegraphic, radio broadcasting and television transmission gear (excluding receiving tubes), No.	19,747	21,871	875,001	1,049,476	12,890	14,659	865,811	1,094,475
85.23-								
120 Communications cable, Kg.	26,162	424,454	136,809	451,780	14,894	214,012	166,194	295,639
90.13-								
091 Other optical appliances and instruments, No.	26,097	675,529	5,458,163	6,525,199	26,450	1,354,851	7,022,062	8,903,517
099 Parts and accessories for optical appliances, instruments and lasers, Kg.	24,931	32,159	1,956,415	2,095,231	46,546	55,624	2,781,054	2,988,395
Total	51,028	707,688	7,414,578	8,620,430	72,996	1,410,475	9,803,116	11,891,912
90.25-								
030 Instruments and gear for checking quantitites of heat, light or sound and parts, Kg.	985	1,368	42,568	61,637	1,058	2,525	33,324	75,702
90.28-								
121 Spectrum analyzers	753	760	3,378,761	3,395,187	655	668	2,958,862	2,985,905
Total	446,220	4,260,072	40,534,549	56,175,686	498,608	5,908,452	45,415,467	66,167,817

Source: Ministry of Finance, Japan Tariff Association

Table 2: Japan's Imports of Selected Communications Equipment, January-August, 1983-1986

(in indicated quantity units and Y1,000)

Trade classification number, item and units	1983 Quantity United States	1983 Quantity Total	1983 Value United States	1983 Value Total	1984 Quantity United States	1984 Quantity Total	1984 Value United States	1984 Value Total
85.13-								
110 Carrier current line systems, No.	6,660	8,109	Y2,221,048	Y2,575,913	12,236	15,165	Y2,556,353	Y3,102,829
121 Electronic telephonic switchboards and exchanges, No.	96	289	657,759	1,418,708	112	127	942,366	1,001,940
122 Other telephonic switchboards and exchanges, No.	--	--	--	--	3	65	1,203	9,986
129 Other electric line telephonic gear, No.	5,888	114,587	275,019	836,947	9,671	371,723	253,616	1,110,058
130 Electric line telegraphic gear, No.	8,894	9,002	95,978	143,057	13,703	13,804	93,401	141,620
210 Parts for electric line telephonic and telegraphic gear, Kg.	27,477	246,297	4,293,404	5,016,864	34,849	87,093	5,290,506	5,690,682
220 Multipurpose parts, Kg.	1,444	1,771	38,131	44,152	8,060	11,842	827,197	919,907
Total	50,459	380,005	7,581,339	10,035,641	78,634	499,819	9,964,642	11,977,022
85.15-								
424 VHF transmitters and transmitter receivers, No.	501	12,189	1,516,514	1,819,148	662	13,254	4,862,700	5,218,703
425 Other transmitters and transmitter-receivers, No.	50,696	55,615	2,164,474	2,222,504	56,621	64,879	1,800,997	1,865,167
510 Parts of radiotelegraphic-radiotelephonic, radio broadcasting and television transmissions and reception gear; and television cameras, Kg.	48,467	1,126,308	2,238,718	8,028,227	67,628	1,081,065	1,686,138	7,718,507
Total	99,664	1,194,112	5,919,706	12,069,879	124,911	1,159,198	8,349,835	14,802,377
85.21-								
140 Tubes for telephonic-telegraphic, radio broadcasting and television transmission gear (except receiving tubes), No.	24,817	25,456	434,656	521,773	14,515	15,850	585,176	715,876
85.23-								
120 Communications cable, Kg.	68,542	92,105	168,808	292,845	16,090	397,667	84,273	375,491
90.13-								
091 Other optical appliances and instruments, No.	9,620	88,156	2,481,115	2,995,995	20,542	577,841	3,289,047	3,972,561
099 Parts and accessories for optical appliances, instruments and lasers, Kg.	23,766	26,879	1,456,780	1,673,690	14,363	19,441	1,111,466	1,220,966
Total	33,386	115,035	3,937,895	4,669,685	34,905	597,282	4,400,513	5,193,527
90.25-								
030 Instruments and gear for checking quantities of heat, light or sound and parts, Kg.	355	1,221	25,737	45,694	523	779	28,394	39,660
90.28-								
121 Spectrum analyzers	365	372	1,659,044	1,686,391	468	472	2,202,505	2,209,726
Total	277,588	1,808,306	12,145,846	36,903,247	270,046	2,671,067	25,615,338	35,313,679

Table 2 (continued)

(in indicated quantity units and Y1,000)

Trade classification number, item and units	1985				1986			
	Quantity		Value		Quantity		Value	
	United States	Total	United States	Total	United States	Total	United States	Total
85.13-								
110 Carrier current line systems, No.	27,407	30,834	Y3,988,719	Y4,463,941	12,591	21,376	Y3,230,838	Y4,024,993
121 Electronic telephonic switchboards and exchanges, No.	211	492	2,000,016	2,039,723	159	629	1,714,913	1,962,880
122 Other telephonic switchboards and exchanges, No.	1	452	454	13,911	--	--	--	--
129 Other electric line telephonic gear, No.	101,624	1,009,614	1,715,242	3,420,090	6,187	924,512	274,332	2,169,627
130 Electric line telegraphic gear, No.	23,453	23,579	212,203	280,070	33,113	36,191	496,756	1,036,392
210 Parts for electric line telephonic and telegraphic gear, Kg.	43,939	147,906	9,929,662	10,597,633	67,475	158,318	9,539,947	10,028,028
220 Multipurpose parts, Kg.	3,741	19,229	236,609	261,044	1,640	9,383	391,080	405,669
Total	200,376	1,232,106	18,082,905	21,076,412	121,165	1,150,409	15,647,866	19,627,589
85.15-								
424 VHF transmitters and transmitter-receivers, No.	2,832	8,976	638,237	798,063	3,176	7,412	763,544	924,650
425 Other transmitters and transmitter-receivers, No.	39,810	43,037	1,437,647	1,493,266	74,413	85,147	1,842,911	1,976,192
510 Parts of radiotelegraphic-radiotelephonic, radio broadcasting and television transmission and reception gear; and television cameras, Kg.	45,413	1,656,262	1,788,226	11,412,713	133,176	1,501,957	1,467,021	6,812,627
Total	88,055	1,708,275	3,864,110	13,704,042	210,765	1,594,516	4,073,476	9,713,469
85.21-								
140 Tubes for telephonic-telegraphic, radio broadcasting and television transmission gear (excluding receiving tubes), No.	8,779	10,328	562,799	599,630	5,222	28,188	212,853	588,297
85.23-								
120 Communications cable, Kg.	10,761	26,760	139,664	185,412	4,945	65,035	89,092	140,140
90.13-								
091 Other optical appliances and instruments, No.	16,912	1,138,350	4,666,424	5,861,346	22,802	425,733	2,924,186	4,223,534
099 Parts and accessories for optical appliances, instruments and lasers, Kg.	37,117	41,380	1,970,672	2,084,825	23,004	34,430	1,289,240	1,457,462
Total	54,029	1,179,730	6,637,096	7,946,171	45,806	460,163	4,213,426	5,680,996
90.25-								
030 Instruments and gear for checking quantities of heat, light or sound and parts, Kg.	391	1,234	21,148	84,891	259	705	20,453	28,770
90.28-								
121 Spectrum analyzers	463	470	2,130,964	2,151,859	442	480	1,780,223	1,844,902
Total	362,854	4,158,903	31,438,686	45,748,417	388,604	3,299,496	26,037,389	37,624,163

Source: Ministry of Finance, Japan Tariff Association

Table 3: U.S. Exports of Selected Communications Equipment, 1982-1985

(in indicated quantity units and $1,000)

Trade classification number, item and units	1982 Quantity Japan	1982 Quantity Total	1982 Value Japan	1982 Value Total	1983 Quantity Japan	1983 Quantity Total	1983 Value Japan	1983 Value Total
75260-								
90 Computer communications and peripheral equipment, No.	18,461	356,090	$51,044	$563,917	20,170	415,562	$51,370	$596,162
76440-								
10 Telephone switching and switchboard equipment and parts	--	--	1,103	378,904	--	--	4,474	439,907
20 Telephone instruments, No.	9,209	305,647	1,209	24,259	10,667	334,084	835	27,714
30 Other telephonic gear and parts	--	--	4,869	274,678	--	--	9,372	203,258
40 Teleprinting and teletypewriting machines, No.	624	23,701	1,577	37,378	649	15,606	1,016	28,165
50 Telegraph gear and parts, No.	--	--	747	113,926	--	--	1,395	90,917
Total	9,833	329,348	9,505	829,145	11,316	349,690	17,092	789,961
76493-								
40 Satellite communications antennas, No.	4	3,229	326	11,157	57	14,260	211	28,782
50 Radio telegraphic-telephonic transmission and reception equipment and parts	--	--	19,544	523,017	--	--	21,514	681,581
Total	4	3,229	19,870	534,174	57	14,260	24,725	710,363
77310-								
05 Telephone and telegraph cable (except fiber-optic), Lb.	57,049	29,742,515	330	51,185	33,758	22,997,637	236	55,471
10 Communications wire and cable (except fiber-optic), Lb.	321,200	15,506,125	1,156	42,608	140,487	24,652,032	958	52,005
Total	378,249	45,248,640	1,486	93,793	174,245	47,649,669	1,194	218,037
87528-								
70 Electric, radio and communications circuit testing equipment	--	--	46,332	223,748	--	--	44,067	218,037
88411-								
10* Fiber-optic strands and cable, Lb.	57	57	3	3	280	280	6	6
Total	406,604	45,937,364	128,240	2,244,780	206,068	48,429,461	135,454	2,242,005

Table 3 (continued)

(in indicated quantity units and $1,000)

Trade classification number, item and units	1982 Quantity Japan	1982 Quantity Total	1982 Value Japan	1982 Value Total	1983 Quantity Japan	1983 Quantity Total	1983 Value Japan	1983 Value Total
75260-								
90 Computer communications and peripheral equipment, No.	32,662	808,892	$75,914	$814,022	38,229	851,879	$92,983	$899,141
76440-								
10 Telephone switching and switchboard equipment and parts	--	--	7,764	399,234	--	--	15,132	362,673
20 Telephone instruments, No.	79,256	645,051	3,396	36,996	94,238	717,978	4,363	37,322
30 Other telephonic gear and parts	--	--	27	20,154	--	--	19,394	313,825
40 Teleprinting and teletypewriting machines, No.	1,221	45,302	3,169	87,223	403	13,044	559	16,693
50 Telegraph gear and parts, No.	--	--	3,024	110,655	--	--	2,576	101,591
Total	80,477	690,353	17,380	654,262	94,641	731,022	42,024	832,104
76493-								
40 Satellite communications antennas, No.	648	16,782	8,359	70,096	184	100,967	1,842	26,701
50 Radio telegraphic-telephonic transmission and reception equipment and parts	--	--	16,670	755,769	--	--	22,905	815,709
Total	648	16,782	25,029	825,865	184	100,967	24,747	842,410
77510-								
05 Telephone and telegraph cable (except fiber-optic), Lb.	62,737	16,221,511	327	32,523	23,859	10,382,355	1,074	20,065
10 Communications wire and cable (except fiber-optic), Lb.	266,248	26,197,181	1,786	63,995	225,989	16,597,234	3,890	63,021
Total	328,985	42,418,692	2,113	96,518	249,848	26,979,589	4,964	83,086
87528-								
70 Electric, radio and communications circuit testing equipment	--	--	24,141	193,069	--	--	27,191	218,268
88411-								
10* Fiber-optic strands and cable, Lb.	361	361	42	42	1,459	19,707	96	394
Total	443,133	13,935,080	144,619	2,583,778	384,361	28,683,164	192,005	2,875,403

*Includes other countries.

Source: U.S. Department of Commerce

Table 4: U.S. Exports of Selected Communications Equipment, January-July, 1983-1986

(in indicated quantity units and $1,000)

Trade classification number, item and units	1983 Quantity Japan	1983 Quantity Total	1983 Value Japan	1983 Value Total	1984 Quantity Japan	1984 Quantity Total	1984 Value Japan	1984 Value Total
75260-								
90 Computer communications and peripheral equipment, No.	194	8,638	$505	$7,787	19,339	493,250	$35,159	$439,765
76440-								
10 Telephone switching and switchboard equipment and parts	--	--	611	8,218	--	--	4,487	258,836
20 Telephone instruments, No.	4,149	33,572	210	2,424	5,153	351,236	715	21,698
30 Other telephonic gear and parts	--	--	52	6,749	--	--	7,909	116,731
40 Teleprinting and teletypewriting machines, No.	9	526	60	1,722	465	8,503	738	16,950
50 Telegraph gear and parts	--	--	71	2,886	--	--	1,863	67,809
Total	4,158	34,098	1,004	21,999	5,618	359,739	15,712	482,024
76493-								
40 Satellite communications antennas, No.	32*	132*	27*	136*	14	9,712	151	15,680
50 Radio telegraphic-telephonic transmission and reception equipment and parts	--	--	1,012	5,811	--	--	10,874	447,752
Total	32	132	1,039	5,947	14	9,712	11,025	463,432
77310-								
05 Telephone and telegraph cable (except fiberoptic), Lb.	510*	36,509	11*	100	38,773	10,429,732	221	20,921
10 Communications wire and cable (except fiberoptic), Lb.	1,154	94,878	44	217	117,157	15,369,808	836	34,684
Total	1,664	131,387	55	317	155,930	25,799,540	1057	55,605
87528-								
70 Electric, radio and communications circuit testing equipment	--	--	46	3,409	--	-	15,669	106,425
88411-								
10 Fiberoptic strands and cable, Lb.	--	--	--	--	3,372	547,116	304	17,999
Total	4,544	44,525	2,649	19,659	184,273	27,209,357	78,926	1,565,250

Table 4 (continued)

(in indicated quantity units and $1,000)

Trade classification number, item and units	1985 Quantity Japan	1985 Quantity Total	1985 Value Japan	1985 Value Total	1986 Quantity Japan	1986 Quantity Total	1986 Value Japan	1986 Value Total
75260-								
90 Computer communications and peripheral equipment, No.	20,433	547,332	$53,432	$520,722	22,816	439,815	$42,169	$499,464
76440-								
10 Telephone switching and switchboard equipment and parts	--	--	10,034	229,563	--	--	9,474	211,796
20 Telephone instruments, No.	87,465	348,763	3,535	19,306	10,470	395,751	1,257	22,663
30 Other telephonic gear and parts	--	--	11,748	162,806	--	--	16,253	172,812
40 Teleprinting and teletypewriting machines, No.	305	9,009	378	11,186	152	5,985	504	9,613
50** Telegraph gear and parts, No.	--	--	1,817	60,442	--	--	--	--
60 Modems, No.	--	--	--	--	162	10,200	354	11,098
70** Telegraph gear and parts, No.	--	--	--	--	--	--	452	67,678
Total	87,770	357,772	27,512	483,303	10,784	411,936	28,294	495,660
76493-								
40 Satellite communications antennas, No.	102	93,970	793	12,866	28	13,494	822	13,710
50 Radio telegraphic-telephonic transmission and reception equipment and parts	--	--	4,819	320,996	--	--	15,147	566,129
Total	102	93,970	5,612	333,862	28	13,494	15,969	579,839
77310-								
05* Telephone and telegraph cable (except fiber-optic), Lb.	19,887	6,179,859	1,041	12,753	--	--	--	--
10 Communications wire and cable, (except fiber-optic), Lb.	151,293	10,994,833	1,781	36,281	107,324	8,967,056	3,170	46,619
Total	171,180	17,174,692	2,822	49,034	107,324	8,967,056	3,170	46,619
87528-								
70 Electric, radio and communications circuit testing equipment	--	--	18,971	142,463	--	--	15,743	115,684
88411-								
10* Fiber-optic strands and cable, Lb.	5,346	137,935	2,502	16,948	72,673	1,282,141	527	13,527
Total	284,831	18,311,701	110,851	1,546,332	213,625	11,114,442	105,872	1,750,793

*Exports of this category to Japan were grouped with several other countries.
**76440-50 became 76440-70 in 1986.

Source: U.S. Department of Commerce